SPARK GAP

Vol. 29, Issue7, July 2012 *MARC - Serving Central Indiana Communities for twenty-nine years*

On Our MARC…

Let me start this month's column with a word of thanks to all those who took time out of their busy schedules to be a part of this year's Field Day. We had over 17 hams that came by to take to the air or lend their support. Several visitors also stopped in to observe the action, including Johnson County Sheriff Doug Cox.

Special thanks to Rusty Kirts, N9LLP, who kept us on the air through the overnight hours. I would also like to thank Jack Parker, W8ISH, for his media relations and points tracking efforts and Steve Carmean, K9DY, as our record keeper extraordinaire. Our final count was 259 QSOs across five bands with the heaviest concentration being on 40 meters. While our participation and contact numbers were up this year, there is plenty of room to grow. Let's start planning now!

A quick reminder of the MARC's upcoming, one-day, tech class on Saturday, Aug. 11th, at the EMA in Franklin. Sign-ups are being taken now and you will find more information at midstatehams.org.

As I write this article, it is July 3rd and another stretch of 100° days is expected. Indiana finds itself in the midst of record heat, severe drought, extreme fire risk, and water restrictions. Please take all necessary precautions to care for yourselves, your family, and your neighbors with special attention to the elderly and infirm. And as always, be prepared, for at any time we could be called out to assist our community.

Thanks for all you do!
Bob - KC9NJM
President

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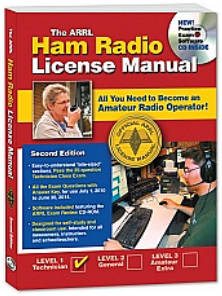
MARC YOUR CALENDER

ONE DAY TECHNICIAN CLASS

SATURDAY AUGUST 11TH 8:00 AM to 4:00 PM

More information to come on the weekly MARC net and the Spark Gap



For more information contact Bruce; secretary@midstatehams.org

The class is using the ARRL Technician License Manual.

2012 Field Day

With temperatures predicted in the 90's our 2012 Field Day coordinators were praised for the decision to conduct the operation from the air conditioned basement EOC Radio room. Despite the heat predictions several club members braved the blazing outdoor temps to set up an auxiliary station for six meters and 2 meter satellite contacts.

Steve Carmean-K9DY headed up the basement radio room using two HF rigs attached to a 40-80 meter wire dipole and a R7 vertical antenna. Beginning at 2PM the small crew of hams tried in vain to make contacts with hundreds of hams across the nation. We could hear them but they were not hearing us. The SWR checked OK but band conditions kept our list of contacts at a minimum.

Outside, the level of frustration grew as the thermometer inched it's way up toward ninety degrees. Joe Antonetti-KC9VKL and Jack Parker-W8ISH set up tables and chairs and Joe's Buddipole for six meter contacts. Nothing was heard. Joe and Ron-K9THR reconfigured the antenna for 20 meters. Again, stations could be heard but no contacts. Jack and Ron tried making a contact with the International Space Station using a hand held Arrow antenna on two meters. Nothing heard. As it turned out the ISS was off the air due to a supply ship blocking their antenna.

As the sun heated up and the afternoon wore on Joe and a troop of hot weary hams tried moving the portable operation across the parking lot to a more shady location. Continued attempts failed to muster even one contact.

Meanwhile, Steve Brown-N9LC decided to camp out at the Juvenile Center's shaded picnic table. He erected a mast on his pickup truck and used a sloper antenna to grab some contacts. The bands were still DOA.

Back downstairs in air conditioned comfort, Bruce Tisdale-K9ICP and Dave Daily-KB9LOT were pushing the base mounted ICOM 719 to the limit trying to make a few contacts. As the minutes passed Bruce's frustration spread though out the jail. Deputies later reported that they thought the jail was being invaded. Bruce's distorted voice was being picked up by the intercom system. Maybe we have a splatter problem with the R7 antenna?

As the hours wore on Steve-K9DY began to make a few contacts. Distant stations began to hear Bruce too. Before long a race was on to see who could make the most contacts on 20 & 40 meters. As the afternoon wore on Jack and Dave tried their hand at filling the log book. Jack found he could not contact Ohio but he did score a contact with a S51 station in Slovenia just north of Italy. Overnight Rusty-N9LLP and Steve-N9LC took advantage of the improving band conditions to increase our score sheet.

Total points are still being figured. We did score some bonus points when Johnson County Sheriff Doug Cox stopped by. We also got points for being in a public place even though most of the people were coming by to visit incarcerated relatives at the jail. You have to admit, there is nothing like a captive audience on Field Day. Our thanks to the two dozen hams and visitors that made Field Day 2012 a success.

-w8ish

2012 FIELD DAY IN ACTION

Measuring the leads with skill

Buddiepole ready outside the EOC

Ron & Steve …….. listen

Dave, Bruce & Steve logging

Joe KC9VKL & Phil KC9VDO

Sherriff Doug Cox stops in for Field Day

Pictures by Jack W8ISH ……..

Nikola Tesla

About one month ago my wife and I took a trip to Niagara Falls, Ontario. This was an early summer trip before all the thousands of tourists would arrive to see a most spectacular water fall in north America. I had long known that one of the pioneers and inventors of the 20th century; Nicola Tesla worked closely with Westinghouse Electric at Niagara Falls.

There is not much left at Niagara Falls of the projects that Tesla engineered and developed but he is not forgotten.

Tesla astonished the world by demonstrating. the wonders of alternating current electricity at the World Columbian Exposition in Chicago in 1893. Alternating current became standard power in the 20th Century. This accomplishment changed the world. He designed the first hydroelectric power plant in Niagara Falls in 1895, which was the final victory of alternating current. The achievement was covered widely in the world press, and Tesla was praised as a hero worldwide. King Nikola of Montenegro conferred upon him the Order of Danilo.

Tesla was a pioneer in many fields. The Tesla coil, which he invented in 1891, is widely used today in radio and television sets and other electronic equipment. That year also marked the date of Tesla's United States citizenship. His alternating current induction motor is considered one of the ten greatest discoveries of all time. Among his discoveries are the fluorescent light , laser beam, wireless communications, wireless transmission of electrical energy, remote control, robotics, Tesla's turbines and vertical take off aircraft. Tesla is the father of the radio and the modern electrical transmissions systems. He registered over 700 patents worldwide. His vision included exploration of solar energy and the power of the sea. He foresaw interplanetary communications and satellites.

The *Century Magazine* published Tesla's principles of telegraphy without wires, popularizing scientific lectures given before Franklin Institute in February 1893.

The *Electrical Review* in 1896 published X-rays of a man, made by Tesla, with X-ray tubes of his own design. They appeared at the same time as when Roentgen announced his discovery of X-rays. Tesla never attempted to proclaim priority. Roentgen congratulated Tesla on his sophisticated X-ray pictures, and Tesla even wrote Roentgen's name on one of his films. He experimented with shadowgraphs similar to those that later were to be used by Wilhelm Rontgen when he discovered X-rays in 1895. Tesla's countless experiments included work on a carbon button lamp, on the power of electrical resonance, and on various types of lightning. Tesla invented the special vacuum tube which emitted light to be used in photography.

The breadth of his inventions is demonstrated by his patents for a bladeless steam turbine based on a spiral flow principle. Tesla also patented a pump design to operate at extremely high temperature.

Nikola Tesla patented the basic system of radio in 1896. His published schematic diagrams describing all the basic elements of the radio transmitter which was later used by Marconi.

In 1896 Tesla constructed an instrument to receive radio waves. He experimented with this device and transmitted radio waves from his laboratory on South 5th Avenue. to the Gerlach Hotel at 27th Street in Manhattan. The device had a magnet which gave off intense magnetic fields up to 20,000 lines per centimeter. The radio device clearly establishes his piority in the discovery of radio.

The shipboard quench-spark transmitter produced by the Lowenstein Radio Company and licensed under Nikola Tesla Company patents, was installed on the U.S. Naval vessels prior to World War I.

In December 1901, Marconi established wireless communication between Britain and the Newfoundland, Canada, earning him the Nobel prize in 1909. But much of Marconi's work was not original. In 1864, James Maxwell theorized electromagnetic waves. In 1887, Heinrich Hertz proved Maxwell's theories. Later, Sir Oliver Logde extended the Hertz prototype system. The Brandley coherer increased the distance messages could be transmitted. The coherer was perfected by Marconi.

However, the heart of radio transmission is based upon four tuned circuits for transmitting and receiving. It is Tesla's original concept demonstrated in his famous lecture at the Franklin Institute in Philadelphia in 1893. The four circuits, used in two pairs, are still a fundamental part of all radio and television equipment.

The United States Supreme Court, in 1943 held Marconi's most important patent invalid, recognizing Tesla's more significant contribution as the inventor of radio technology.

Tesla built an experimental station in Colorado Springs, Colorado in 1899, to experiment with high voltage, high frequency electricity and other phenomena.

When the Colorado Springs Tesla Coil magnifying transmitter was energized, it created sparks 30 feet long. From the outside antenna, these sparks could be seen from a distance of ten miles. From this laboratory, Tesla generated and sent out wireless waves which mediated energy, without wires for miles.

In Colorado Springs, where he stayed from May 1899 until 1900, Tesla made what he regarded as his most important discovery-- terrestrial stationary waves. By this discovery he proved that the Earth could be used as a conductor and would be as responsive as a tuning fork to electrical vibrations of a certain frequency. He also lighted 200 lamps without wires from a distance of 25 miles(40 kilometers) and created man-made lightning. At one time he was certain he had received signals from another planet in his Colorado laboratory, a claim that was met with disbelief in some scientific journals.

The old Waldorf Astoria was the residence of Nikola Tesla for many years. He lived there when he was at the height of financial and intellectual power. Tesla organized elaborate dinners, inviting famous people who later witnessed spectacular electrical experiments in his laboratory.

Financially supported by J. Pierpont Morgan, Tesla built the Wardenclyffe laboratory and its famous transmitting tower in Shoreham, Long Island between 1901 and 1905. This huge landmark was 187 feet high, capped by a 68-foot copper dome which housed the magnifying transmitter. It was planned to be the first broadcast system, transmitting both signals and power without wires to any point on the globe. The huge magnifying transmitter, discharging high frequency electricity, would turn the earth into a gigantic dynamo which would project its electricity in unlimited amounts anywhere in the world.

Tesla's concept of wireless electricity was used to power ocean liners, destroy warships, run industry and transportation and send communications instantaneously all over the globe. To stimulate the public's imagination, Tesla suggested that this wireless power could even be used for interplanetary communication. If Tesla were confident to reach Mars, how much less difficult to reach Paris. Many newspapers and periodicals interviewed Tesla and described his new system for supplying wireless

power to run all of the earth's industry.

Because of a dispute between Morgan and Tesla as to the final use of the tower. Morgan withdrew his funds. The financier's classic comment was, "If anyone can draw on the power, where do we put the meter?"

The erected, but incomplete tower was demolished in 1917 for wartime security reasons. The site where the Wardenclyffe tower stood still exists with its 100 feet deep foundation still intact. Tesla's laboratory designed by Stanford White in 1901 is today still in good condition and is graced with a bicentennial plaque.

Tesla lectured to the scientific community on his inventions in New York, Philadelphia and St. Louis and before scientific organizations in both England and France in 1892. Tesla's lectures and writings of the 1890s aroused wide admiration among contemporaries popularized his inventions and inspired untold numbers of younger men to enter the new field of radio and electrical science.

Nikola Tesla was one of the most celebrated personalities in the American press, in this century. According to *Life Magazine's* special issue of September, 1997, Tesla is among the 100 most famous people of the last 1,000 years. He is one of the great men who divert the stream of human history. Tesla's celebrity was in its height at the turn of the century. His discoveries, inventions and vision had widespread acceptance by the public, the scientific community and American press. Tesla's discoveries had extensive coverage in the scientific journals, the daily and weekly press as well as in the foremost literary and intellectual publications of the day. He was the Super Star.

Tesla wrote many autobiographical articles for the prominent journal *Electrical Experimenter*, collected in the book, *My Inventions*. Tesla was gifted with intense powers of visualization and exceptional memory from early youth on. He was able to fully construct, develop and perfect his inventions completely in his mind before committing them to paper.

According to Hugo Gernsback, Tesla was possessed of a striking physical appearance over six feet tall with deep set eyes and a stately manner. His impressions of Tesla, were of a man endowed with remarkable physical and mental freshness, ready to surprise the world with more and more inventions as he grew older. A lifelong bachelor he led a somewhat isolated existence, devoting his full energies to science.

In 1894, he was given honorary doctoral degrees by Columbia and Yale University and the Elliot Cresson medal by the Franklin Institute. In 1934, the city of Philadelphia awarded him the John Scott medal for his polyphase power system. He was an honorary member of the National Electric Light Association and a fellow of the American Association for the Advancement of Science. On one occasion, he turned down an invitation from Kaiser Wilhelm II to come to Germany to demonstrate his experiments and to receive a high decoration.

In 1915, a *New York Times* article announced that Tesla and Edison were to share the Nobel Prize for physics. Oddly, neither man received the prize, the reason being unclear. It was rumored that Tesla refused the prize because he would not share with Edison, and because Marconi had already received his.

Tesla died on January 7th, 1943 in the Hotel New Yorker, where he had lived for the last ten years of his life. Room 3327 on the 33rd floor is the two-room suites he occupied.

A state funeral was held at St. John the Divine Cathedral in New York City. Telegrams of condolence were received from many notables, including the first lady Eleanor Roosevelt and Vice President Wallace. Over 2000 people attended, including several Nobel Laureates. He was cremated in Ardsley on the Hudson, New York. His ashes were interned in a golden sphere, Tesla's favorite shape, on permanent display at the Tesla Museum in Belgrade along with his death mask.

In his speech presenting Tesla with the Edison medal, Vice President Behrend of the Institute of Electrical Engineers eloquently expressed the following: "Were we to seize and eliminate from our industrial world the result of Mr. Tesla's work, the wheels of industry would cease to turn, our electric cars and trains would stop, our towns would be dark and our mills would be idle and dead. His name marks an epoch in the advance of electrical science." Mr. Behrend ended his speech with a paraphrase of Pope's lines on Newton: "Nature and nature's laws lay hid by night. God said 'Let Tesla be' and all was light."

..... the Telsa Memorial Society

2012 Indiana Hamfests

Feb 25	**Cabin Fever Hamfest**, LaPorte Civic Auditorium, LaPorte IN, 7 AM till 1 PM CST, http://k9jsi.org/ , Info N9ROH@csinet.net
Feb 25	Brownsburg Hamfest, American Legion Post 331, Brownsburg IN, 6AM-3:30PM, Talk-in 147.015+, Contact: K9MSG dlucas002@indy.rr.com
March 3	**Dugger Hamfest**, Dugger Community Building, South Hicum Street (just off State Road 54) Dugger, IN 47848, http://www.kc9ak.org/hamfest.html
March 10	**Terre Haute Hamfest**, Indiana State University Dede Activity Center, Terre Haute IN, http://w9uuu.org/
March 31	**Columbus Amateur Radio Club Hamfest**, Community Building in Columbus, Indiana http://www.carcnet.org/
April 21	**North Central Indiana Hamfest** , Miami County 4-H Fairground, Miami County Road 200 North & Mexico Road, Peru IN http://www.nci-hamfest.net/
July 14	**Indianapolis Hamfest**, Camp Sertoma, Indianapolis, http://www.indyhamfest.com
Oct. 6	**Hoosier Hills Hamfest**, Lawrence County 4H Fairgrounds, 11261 US Hwy 50 West., Bedford , http://www.w9qyq.org/
Nov. 17-18	**Indiana State Convention, Fort Wayne Hamfest & Computer Expo**, Allen County War Memorial Coliseum, Fort Wayne, http://www.fortwaynehamfest.com

MID-STATE AMATEUR RADIO CLUB

The Mid-State Amateur Radio Club meets the THIRD SATURDAY of each month
in the basement of the Johnson County Emergency Management Agency,
1111 Hospital Road, Franklin, Indiana 46131.

See our website, www.midstatehams.org, for maps on how to get to our meeting.

Everyone is welcome; you do not have to be a HAM to attend our meetings or a member of the club.

WA9RDF
Repeater
146.835/
146.235 MHz
151.4 Hz PL Tone

Club Officers:
President: Robert Jones – KC9NJM
Vice President: Dave Daily – KB9LOT
Secretary: Bruce Tisdale – K9ICP
Treasurer: Jacki Frederick – KI6QOG
Repeater Trustee: Jay Chrismon – AA9YP

Weekly Net: Sunday evening 7:00 PM ARES/RACES members and ALL RADIO AMATEURS

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Franklin, Indiana
46131

Editor: Robert LaGrange N9SIU

Please send your articles to my email n9siu@yahoo.com no later than the 3rd of the month
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